- map?
- ordering?
- Pictures for 18-on?

Debbie L

Woodlot Alternatives, Inc.

13 September 1995

Harpswell Conservation Commission
Attn: Josie Quintrell
Municipal Offices
Harpswell, ME 04079

Re: Evaluation of wetlands zoned as Resource Protection under Shoreland Zoning

Dear Josie:

Thank you for the opportunity to provide Harpswell with an evaluation of certain wetlands currently zoned as Resource Protection (RP), and other wetlands that might qualify for RP. It was a pleasure working with the town, and we look forward to providing any additional services required in the future.

Enclosed are the results of our work from this past field season, which we have combined with previous survey efforts from last year. The purpose of the study was to determine whether wetlands included in the project meet Harpswell and/or State of Maine Guidelines for Resource Protection (RP) under Shoreland Zoning. This involved reviewing available information from aerial photographs, National Wetlands Inventory Maps (NWI), and Maine Department of Inland Fisheries and Wildlife (MDIFW). The objectives were to provide scientific information for zoning justification, as well as review the current RP zoning districts and recommend changes if warranted.

METHODS

Procedures to determine the appropriate Shoreland Zoning District classification for each wetland began by examining information available on aerial photographs, NWI maps, Soil Conservation Service (SCS) Medium Intensity Maps, and Federal Emergency Management Agency (FEMA) flood maps of the Town. Wetlands were located on the aerial photographs and the various wetland types were identified and delineated on acetate overlays. Each wetland site was then located on USGS topographic maps, NWI maps, SCS Soil Survey maps, and FEMA flood maps.

Site visits were conducted to verify wetland classification and to assess the primary functions of each wetland. Functional assessments based on observable vegetational and hydrological characteristics were conducted during site visits.

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Field surveys were also used to rate each freshwater wetland site for waterfowl and wading bird habitat. Using the MDIFW's procedure for rating significant waterfowl and wading bird habitat (WWH), the dominant wetland type, wetland diversity, and wetland size were used to obtain a numerical rating of the site. All wetlands were rated using this 3 factor analysis, however, when an indeterminate rating was concluded, the procedure also utilizes a 2 criteria system based on wetland interspersion and percent open water to rate the site.

MDIFW's procedure for rating significant WWH is used for freshwater wetlands. At this time, no formal procedure to assess coastal wetlands is available. We based our rating of coastal wetlands on experience and best professional judgement of the value of specific site as waterfowl and wading bird habitat.

For a final recommendation, we compared our findings with the Town's zoning ordinance and general zone reference map to determine if current classifications were appropriate. According to the ordinance, RP districts important to this project include those areas that 1) are within 250' of high and moderate value waterfowl and wading bird habitat; and 2) are within the 100-year floodplain adjacent to tidal waters.

WATERFOWL AND WADING BIRD HABITATS

The Natural Resources Protection Act defines significant wildlife habitat as those areas that provide habitat for threatened and endangered species, high and moderate value deer wintering areas and travel corridors, high and moderate value waterfowl and wading bird habitats, including nesting and feeding areas as defined by the MDIFW, critical spawning areas for Atlantic salmon, and shorebird nesting, staging, and feeding areas including offshore nesting island. For this project, we used MDIFW's inland wetland waterfowl and wading bird habitat rating system to determine the value of wetlands in Harpswell.

Habitat used by waterfowl can be characterized both seasonally and behaviorally as breeding habitats, migration and staging habitats, and wintering habitats. Breeding habitats include secluded areas for nesting, loafing, and brood rearing, and open water areas for courtship. Nesting habitat includes dense, shrub and emergent vegetation that provides concealment and protection from predators. Brood rearing areas have concealment cover interspersed with open water and areas of herbaceous vegetation that are rich in aquatic invertebrates. Migration and staging areas contain protected places where forage is plentiful. These areas are often found on the coast or in estuaries where food supplies are abundant, and are used to increase fat reserves prior to, and during migration. Waterfowl wintering habitats include areas where strong currents maintain an ice-free condition throughout the winter. Food resources are available in adjacent tidal flats and underwater substrates. Wading bird habitats include breeding, feeding, roosting, loafing, and migration areas. These populations winter south of Maine, therefore, wintering habitat is less important.

RESULTS

Results indicate that most of the wetlands (14 of 18) are correctly zoned and meet the RP classification (Table 1). The sites meet either the moderate to high value waterfowl and wading bird habitat criteria, or are located within the 100-year floodplain, or both. Of the four sites that appear to be incorrectly zoned, one should be included in RP, two others should be removed, and the last one is questionable as to the RP classification. Six of the nine other wetlands evaluated, none of which are currently zoned RP, should be zoned Resource Protection because they are within the 100-year floodplain and are of moderate to high value for wading birds and waterfowl. Individual wetland descriptions are included at the end of this document.

Wetland 12 is a coastal wetland currently without Resource Protection, and it is likely that this site has moderate to high value for wildlife as a coastal wetland. Wetlands 14 and 16 should be removed from protection since they do not meet any of the criteria outlined in the Town's zoning ordinance for RP. Both are indeterminate/low value for waterfowl and wading birds, and they are not within the 100-year floodplain. Wetland 17 contains 2 acres of bog, and you may want to consider this for RP due to the limited local availability of this wetland type within the Town. Wetlands 19, 20, 23, 24, and 27 are within the 100-year floodplain.

Results from the functional analysis indicate that the major functions of these wetlands are floodflow alteration, sediment/toxicant retention, and nutrient removal/retention/transformation (Table 2). Also important are wildlife habitat, educational value, and recreation. Coastal marshes, streams and open water bodies within and adjacent to wetlands serve as fish and shellfish habitat, as well as provide visual and aesthetic diversity. None of the sites are known to be groundwater recharge areas, endangered species habitat, or important for uniqueness or natural heritage.

In conclusion, the project was very successful. Most of the wetlands are correctly classified, but a few changes are required. Please look over the data, and feel free to call me with any questions or changes you have.

Following tables 1 and 2 are general management recommendations for non-resource protection zoned wetlands. These guidelines contain some general conditions from state and federal wetland protection rules that you may already be familiar with.

Sincerely,

WOODLOT ALTERNATIVES, INC.

John P. Lortie
President

INDIVIDUAL WETLAND DESCRIPTIONS

Wetland 1- coastal wetland at the end of Stover Point.

This site contains 5 wetland types (marine intertidal unconsolidated shore, estuarine intertidal emergent, estuarine intertidal aquatic bed, palustrine emergent, and palustrine scrub-shrub). Plant species include salt-hay grass, smooth cordgrass, seaside goldenrod, rose, cattail, alder, and winterberry. Bird species that commonly use these areas include great blue herons, green-backed herons, and black-crowned night-herons. The wetland is within the 100-year floodplain. High or moderate value is likely due to the variety of wetland types as well as the proximity to the ocean.

Wetland 2- freshwater wetland just north of Cundy's Harbor

This site contains 2 wetland types (palustrine emergent, and palustrine scrub-shrub). Plant species include cattail, alder, sedges, meadowsweet, and winterberry. The wetland was rated as moderate WWH because of the large area of emergent vegetation, but the site lacks adequate open water to provide good breeding habitat. Waterfowl and wading birds may use the area for feeding or during migration. Two osprey nests were observed within the wetland.

Wetland 3- freshwater wetland on Bethel Point

This wetland contains 3 wetland types (open water, palustrine emergent, and palustrine scrub-shrub). Plant species include alder, winterberry, sensitive fern, raspberry, and cattail. The wetland was rated as moderate because there is a good interspersion of breeding and feeding habitats. Both waterfowl and wading birds could use the area for feeding and during migration. However, the overall value of the wetland is somewhat limited because of its small size.

Wetland 4- freshwater wetland south of East Harpswell

This wetland contains 3 wetland types (open water, palustrine emergent, and palustrine scrub-shrub). Plant species include alder, winterberry, sensitive fern, royal fern, soft rush, cattail, large cranberry, and steeplebush. The site was rated as high value due to the interspersion of open water and shallow fresh marsh. Waterfowl and wading birds would most likely use this area for both breeding and feeding.

Wetland 5- coastal wetland southeast of East Harpswell

This wetland contains 4 wetland types (estuarine intertidal emergent, palustrine forested, palustrine scrub-shrub, and palustrine emergent). Plant species include cattail, alder, winterberry, meadowsweet, red maple, cinnamon fern, glasswort, smooth cordgrass, and prairie cordgrass. Although the FEMA maps indicate that the site is within the 500-year floodplain, this is most likely an error due to the proximity of the wetland to the ocean and its direct hydrological connection at high tide. High to moderate value is likely due to the interspersion of fresh and salt water wetland types associated with the area. This area would most likely be used for a feeding area by wading birds, however there is limited open water for waterfowl.

Wetland 6- freshwater wetland east of Cranberryhorn Hill

(out of consideration) Similar to wetland #9

This wetland contains 2 wetland types (palustrine forested and palustrine scrub-shrub). Plant species include black spruce, red maple, winterberry, alder, cattail, royal fern, and cinnamon fern. The site was rated indeterminate/low due to the limited value of these wetland types for waterfowl and wading birds.

Wetland 7-freshwater wetland north of East Harpswell

This wetland contains 3 wetland types (palustrine scrub-shrub, palustrine emergent, and palustrine open water). Plant species include alder, winterberry, steeplebush, cattail, wool grass, and soft rush. The site was rated high because of the large amount of emergent vegetation associated with open water. This combination provides optimal feeding and brood rearing habitats mostly for waterfowl like mallards or black ducks.

Wetland 8- freshwater wetland that straddles Route 24, east of Misery Hill

This wetland contains 4 wetland types (palustrine forested, palustrine scrub-shrub, palustrine emergent, and palustrine open water). Plant species include red maple, black spruce, alder, cattail, royal fern, sensitive fern, steeplebush, and meadowsweet. The wetland was rated indeterminate/low for the entire site because of the predominance of forested and scrub-shrub wetland types. However, we recommend RP classification for the emergent/open water areas, because if evaluated alone, the WWH rating would most likely be moderate to high.

Wetland 9- freshwater wetland east of North Harpswell

Similar to wetland #6

This wetland contains 1 wetland type (palustrine scrub-shrub). Plant species include alder, meadowsweet, larch, red maple, goldenrod species, and sensitive fern. The site was rated low because waterfowl and wading birds infrequently use this wetland type and there is little wetland type variety.

Wetland 10- freshwater wetland east of North Harpswell

This wetland contains 4 wetland types (palustrine forested, palustrine scrub-shrub, palustrine emergent, and palustrine open water). Plant species include winterberry, alder, wool grass, sensitive fern, swamp candles, bur-reed, and manna grass. The site was rated indeterminate/moderate because the dominant wetland type (inland fresh meadow) is of less value than other types, but in combination with 2 other types, the value of the entire wetland is increased. There is a stream that provides some open water and may be valuable to waterfowl for brood rearing and feeding.

Wetland 11- combined coastal marsh and freshwater wetland northeast of North Harpswell

This wetland contains 4 wetland types (palustrine forested, palustrine scrub-shrub, palustrine emergent, and estuarine intertidal emergent). Plant species include red maple, alder, green ash, winterberry, wool grass, steeplebush, swamp candles, soft rush, bur-reed, cattail, goldenrods, and sedges. High to moderate value is likely due to the interspersion of fresh and salt water wetland types associated with the area. Wading birds like great blue herons, green-backed herons, and snowy egrets would mostly use the intertidal areas for feeding and staging during migration.

Wetland 12- coastal and freshwater wetland associated with Skolfield Cove

This wetland contains 4 wetland types (palustrine scrub-shrub, palustrine emergent, palustrine open water, and estuarine intertidal emergent). Plant species include winterberry, meadowsweet, raspberry, smooth cordgrass, prairie cordgrass, black grass, and seaside goldenrod. High to moderate value is likely due to the interspersion of fresh and salt water wetland types associated with the area. Wading birds would most likely use this area for feeding.

Wetland 13- freshwater wetland south of Reed Cove, Orrs Island

This wetland contains 4 wetland types (palustrine forested, palustrine scrub-shrub, palustrine emergent, palustrine open water). Plant species include alder, red maple, winterberry, meadowsweet, cattail, wool grass, rose, sensitive fern, goldenrods, and asters. This site was rated moderate because of the presence of open water in association with emergent vegetation. Waterfowl could use this area as breeding habitat because concealment cover and feeding areas are optimally interspersed.

Wetland 14- freshwater wetland northeast of West Harpswell

This wetland contains 4 wetland types (palustrine forested, palustrine scrub-shrub, palustrine emergent, and palustrine open water). Plant species include red maple, alder, winterberry, highbush blueberry, cattail, sedges, soft rush, spike rush, and wool grass. The site was rated indeterminate/low because the wetland is dominated by the scrub-shrub type and the amount of higher value habitats is limited.

Wetland 15- stream in U.S. Naval Reserve land northwest of West Harpswell

This site contains no wading bird and waterfowl habitat wetland types, although a channelized stream crosses the property. The site is surrounded by upland forest species including red and sugar maple, yellow and gray birch, red oak, and cherry. The site was rated low due to the lack of wetland types utilized by waterfowl and wading birds.

Wetland 16- freshwater wetland southwest of Harpswell Center

This wetland contains 3 wetland types (palustrine forested, palustrine scrub-shrub, and palustrine emergent). Plant species include red spruce, red maple, alder, winterberry, highbush blueberry, steeplebush, soft rush, bunchberry, and goldthread. The wetland was rated indeterminate/low because the dominant wetland type (scrub-shrub) is of low value to waterfowl and wading birds.

Wetland 17- freshwater wetland southwest of Dyer Cove

This wetland contains 3 wetland types (palustrine forested, palustrine scrub-shrub, and palustrine emergent). Plant species include hemlock, red maple, black spruce, highbush blueberry, cinnamon fern, sedges, large cranberry, and cotton grass. This site was rated indeterminate/low due to the lack of preferred waterfowl and wading bird habitat, but may be considered for RP because of a 2 acre bog on the site. Bogs are not common in Harpswell.

Wetland 18- coastal marsh at the head of Mill Cove

This wetland is exclusively coastal marsh with a number of palustrine species present near the upland boundaries. Plant species include salt marsh sedge, smooth cordgrass, salt-hay grass, rose, meadowsweet spiraea, speckled alder, winterberry, and sensitive fern. The site was not rated because methods have not been developed by MDIFW. The site should be included for RP because it lies within the 100-year floodplain.

Wetland 19- coastal marsh along Harpswell Cove

This wetland is exclusively coastal marsh. Smooth cordgrass, salt-hay grass, and salt marsh sedge are the dominant plant species. Bird species observed during field inspections include a pair of osprey and a great blue heron. The site was not rated with MDIFW standards but should be included in RP because it lies within the 100-year floodplain and is most likely of moderate value for waterfowl and wading birds.

Henry's Creek

Wetland 20-coastal marsh north of Long Reach Mountain

This wetland contains 2 wetland types (coastal marsh and a forested wetland). Plant species of the estuarine portions include smooth cordgrass, salt-hay grass, and seaside arrow-grass. The forested wetland is dominated by red maple, speckled alder, balsam fir, sensitive fern, cinnamon fern, and meadowsweet. A single greater yellowlegs was observed during the survey. The coastal marsh portion of this site should be considered for RP because it is within the 100-year floodplain.

Wetland 21- coastal marsh surrounding Strawberry Cove

Near the Town Office

This wetland contains 3 wetland types (coastal marsh, scrub-shrub, and forested wetlands). Estuarine emergent vegetation includes smooth cordgrass and salt-hay grass. Forested and scrub-shrub portions are dominated by red maple, speckled alder, sensitive fern, cinnamon fern, and meadowsweet. The coastal marsh portion of this wetland should stay in RP because of its moderate to high value for waterfowl and wading birds, and because it is within the 100-year floodplain.

Wetland 22- coastal marsh at the head of Long Reach

Near The East Harpswell Nazarene Church

This wetland is exclusively coastal marsh. Plant species include smooth cordgrass, salt-hay grass, salt marsh sedge, cattail, seaside arrow-grass, and baltic rush. Bird species observed during the field survey include great blue heron, snowy egret, and greater yellowlegs. This wetland should remain in RP because it is likely moderate to high value waterfowl and wading bird habitat, and it is within the 100-year floodplain.

Wetland 23- freshwater impounded wetland on Gun Point

Dan's Pond

This wetland contains 3 wetland types (palustrine emergent, forested, and scrub-shrub wetlands). Plant species in emergent portions include cattail, meadowsweet spiraea, highbush blueberry, speckled alder, and cinnamon fern. Forested and scrub-shrub portions include red maple, meadowsweet spiraea, speckled alder, highbush and lowbush blueberry. The emergent and scrub-shrub portions of this site should be included in RP because they have moderate value for waterfowl and wading birds.

Wetland 24- forested wetland near Dyer Cove

This wetland contains 2 wetland types (forested and scrub-shrub) and a third portion that is a combination of forested and scrub-shrub wetland. Plant species include speckled alder, red maple, red spruce, balsam fir, sensitive fern, cinnamon fern, highbush blueberry, and winterberry. Although this wetland is shown to be within the 100-year floodplain, we do not recommend RP zoning because it is principally forested.

Wetland 25- coastal marsh at the head of Doughty Cove

This wetland contains 2 wetland types (estuarine emergent and scrub-shrub). Plant species include smooth cordgrass, seaside arrow-grass, cattail, sensitive fern, cinnamon fern, wool grass, common reed, winterberry, speckled alder, and red maple. This site should be included in RP because it is within the 100-year floodplain and is likely moderate to high value for waterfowl and wading birds.

Wetland 26- freshwater impounded wetland on Dingley Island

This wetland contains 3 wetland types (shallow fresh marsh, deep open water, and scrub-shrub wetlands). Plant species include speckled alder, winterberry, wool grass, soft rush, cattail, meadowsweet spiraea, sensitive fern, and cinnamon fern. Herring gulls, greater black-backed gulls, and red winged blackbirds were observed during field surveys. This wetland should not be included in RP because of its low waterfowl and wading bird habitat value, and because it is not within the 100-year floodplain.

Wetland 27- coastal marsh at the head of Sandy Cove

This wetland contains 3 wetland types (estuarine emergent, forested, and scrub-shrub wetlands). Plant species include smooth cordgrass, salt-hay grass, seaside arrow-grass, cattail, speckled alder, red spruce, winterberry, highbush blueberry, and cinnamon fern. The coastal marsh and scrub-shrub portions of this site should be included in RP because they are within the 100-year floodplain.

TABLE 1

WATERFOWL AND WADING BIRD HABITAT (WWH) RATINGS, CURRENT ZONING, AND RECOMMENDED CHANGES TO ZONING FOR 27 WETLANDS IN HARPSWELL, MAINE

WWH RATING SCORE: LOW (1-4), INDETERMINATE (5-7), MODERATE (8-9), HIGH (10-12)

WETLAND TYPES:

Type 1 - Seasonal Flooded Basins/Flats
Type 2 - Inland Fresh Meadow
Type 3 - Inland Shallow Fresh Marsh
Type 4 - Inland Deep Fresh Marsh
Type 5A - Inland Deep Open Water
Type 5B - Inland Shallow Open Water
Type 6 - Shrub Swamp
Type 7 - Wooded Swamp
Type 8 - Bogs
Type 9 - Estuarine Intertidal Emergent Vegetation
Type 10 - Estuarine Intertidal Aquatic Bed
Type 11 - Marine Intertidal Unconsolidated Shore

WETLAND NUMBER	WWH RATING	CURRENT ZONING	MEETS RESOURCE PROTECTION CRITERIA	WETLAND TYPES	ACREAGE	COMMENTS	ADJACENT MARINE RESOURCES
1	N/A	RP	yes, within 100-year flood zone, moderate to high value wildlife habitat	9	7.3	coastal, likely high or moderate value as a coastal wetland	
				11	3.6		
				10	2.7		
				6	1.4		
				3	0.6		
				Total	15.6		
2	MOD	RP	yes, moderate value wildlife habitat	3	20.4		
				6	7.8		
				5B	0.3		
				Total	28.5		
3	MOD	RP	yes, within 100-year flood zone, moderate value wildlife habitat	3	5.7		
				6	3.5		
				5B	0.2		
				Total	9.4		
4	HIGH	RP	yes, high value wildlife habitat	4	17.7		
				6	1.8		
				5A	1.2		
				8	0.2		
				Total	20.9		

WETLAND NUMBER	WWH RATING	CURRENT ZONING	MEETS RESOURCE PROTECTION CRITERIA	WETLAND TYPES	ACREAGE	COMMENTS	ADJACENT MARINE RESOURCES
5	N/A	RP	yes, within 100-year flood zone, moderate to high value wildlife habitat	9	10.5	coastal wetland, flood map classification on FEMA maps is wrong	
				6	1.5		
				3	0.5		
				7	0.3		
				Total	ERR		
6	IND/LOW	N/A	no, does not meet criteria	6	5.4		
				7	3.2		
				2	0.2		
				Total	8.8		
7	HIGH	RP	yes, high value wildlife habitat	3	14.6		
				6	3.4		
				7	2.9		
				5B	0.9		
				Total	21.8		
8	IND/LOW	RP for PEM/PSS none for the rest	yes, portions of the wetland would be moderate to high value wildlife habitat if examined separately	7	33.6	we recommend RP for the PEM and open water portion of the wetland	
				6	20.1		
				3	5.5		
				5B	0.7		
				Total	59.9		
9	LOW	N/A	no, does not meet criteria	6	7.8		
				2	N/A		
				Total	7.8		
10	IND/MOD	RP	yes, within 100-year flood zone, moderate value wildlife habitat	2	6.1		
				5B	3.1		
				6	0.9		
				7	0.9		
				Total	11.0		

WETLAND NUMBER	WWH RATING	CURRENT ZONING	MEETS RESOURCE PROTECTION CRITERIA	WETLAND TYPES	ACREAGE	COMMENTS	ADJACENT MARINE RESOURCES
11	N/A	RP	yes, within 100-year flood zone	9	6.2	coastal wetland, likely high to moderate value as a coastal wetland	
				2	1.2		
				7	1.1		
				6	0.5		
				Total	9.0		
12	N/A	N/A	yes, within 100-year flood zone	9	17.1	coastal wetland, we recommend adding to resource protection district	
				6	1.0		
				2	0.7		
				5A	0.5		
				10	N/A		
				Total	19.3		
13	MOD	RP	yes, moderate value wildlife habitat	6	4.4		
				4	4.1		
				7	3.1		
				5A	2.0		
				Total	13.7		
14	IND/LOW	RP	no, does not meet criteria	6	5.5		
				7	4.1		
				3	1.0		
				5B	0.5		
				Total	11.1		
15	LOW	N/A	no, does not meet criteria	7	N/A	channelized stream	
16	IND/LOW	RP	no, does not meet criteria	6	2.6	should be removed from resource protection	
				7	0.4		
				2	0.2		
				Total	3.2		
17	IND/LOW	RP	no, does not meet criteria	6	2.8	questionable as to resource protection classification	
				8	2.2		
				7	1.5		
				Total	6.5		

WETLAND NUMBER	WWH RATING	CURRENT ZONING	MEETS RESOURCE PROTECTION CRITERIA	WETLAND TYPES	ACREAGE	COMMENTS	ADJACENT MARINE RESOURCES
18	N/A	RP (partial)	yes, within the 100-year floodplain	9	7.2	mod. to high value for fall waterfowl migration	
19	N/A	N/A	yes, within the 100-year floodplain	9	11.7	likely moderate value for waterfowl	
20	N/A	N/A	yes, partially within the 100-year floodplain	9 7 Total	7.4 1.2 8.6	recommend RP for the coastal wetland	
21	N/A	RP	yes, partially within the 100-year floodplain	9 6 7 Total	5.7 1.5 1.2 8.4	likely mod. to high value for waterfowl and seals, recommend RP for the coastal wetland	
22	N/A	RP	yes, within the 100-year floodplain	9	7.8	likely moderate value for waterfowl	
23	MOD	N/A	yes, moderate value for waterfowl and wading birds	4 5a 6 7 Total	12.8 34.9 0.9 5.5 54.1	recommend RP for the PEM, PSS, and open water areas	
24	LOW	N/A	yes, within the 100-year floodplain	6/7 6 7 Total	4.9 0.6 6.1 11.6		
25	N/A	RP	yes, within the 100-year floodplain	9 6 Total	66.6 4.5 71.1	likely mod. to high value for waterfowl	
26	LOW	N/A	no, not within 100-year floodplain, low wildlife value	3 5a 6 Total	0.3 7.2 0.8 8.3		

WETLAND NUMBER	WWH RATING	CURRENT ZONING	MEETS RESOURCE PROTECTION CRITERIA	WETLAND TYPES	ACREAGE	COMMENTS	ADJACENT MARINE RESOURCES
27	N/A	RP	yes, partially within the 100-year floodplain	9 6 7 Total	3.9 1.5 1.3 6.7	recommend RP for the coastal wetland and the PSS wetland	

TABLE 2

PRIMARY WETLAND FUNCTIONS FOR 17 WETLANDS IN HARPSWELL, MAINE.

	Wetland Number																										
Primary Wetland Functions:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Groundwater Recharge/Discharge																											
Floodflow Alteration	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Sediment/Shoreline Stabilization	x											x						x	x		x	x	x		x	x	x
Sediment/Toxicant Retention	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Nutrient Removal/Retention/Transformation	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Production Export (Nutrient)	x										x	x			x			x	x	x	x	x			x		x
Fish & Shellfish Habitat	x		x	x	x		x			x		x	x	x	x			x	x	x	x	x	x		x	x	x
Wildlife Habitat	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Endangered Species Habitat																											
Visual Quality/Aesthetics	x	x	x	x	x			x				x	x					x	x	x	x	x	x		x	x	x
Educational/Scientific Value	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Consumptive and Non-consumptive Recreation	x	x	x	x	x	x	x	x	x	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x
Uniqueness/Heritage																											

GENERAL MANAGEMENT RECOMMENDATIONS FOR NON-RESOURCE PROTECTION ZONED WETLANDS

1. Direct impacts to wetlands from filling, draining, dredging, and other actions should be avoided to the maximum extent practicable. When impacts cannot be avoided they should be minimized to the maximum extent possible. Alternatives for avoiding and minimizing impacts to wetlands should be fully explored before allowing an impact.

2. Some agricultural practices and timber harvesting practices take place in wetlands. When cattle, horses or other animals utilize a wetland area for grazing or as a travel corridor, repeated trampling exposes soil, and erosion and sedimentation can occur during a storm event. Wetland areas prone to erosion should be used carefully so that soils do not become exposed. Buffers between wetlands and grazing areas should be established, where possible. Manure from cattle, horses and other farm animals can wash downstream into wetlands and reduce water quality. Establishing buffers between areas where manure accumulates, or is stored, and wetlands can help alleviate water quality degradation.

   Timber harvesting in wetlands is best performed during the winter when soils are frozen. If harvesting occurs when soils are not frozen, severe erosion can result from repeated use of skid trails. In addition, damage to the rest of the wetland plant community is often more significant than when winter harvesting takes place.

3. Indirect impacts to wetlands are usually associated with activities that take place upslope or immediately adjacent to wetlands. For example, plowing a field right up to the edge of a wetland can result in erosion and sedimentation problems if a storm event occurs before plants are established. Generally, water quality and wetland-dependant wildlife habitats are best protected using buffers. The size of the buffer will vary depending on the type of wetland, slope, type of soils, and type of activity. In general drier end wetlands require a smaller buffer, while wetter wetlands require a larger buffer.

4. Use Common Sense!!

Town of Harpswell
Wetlands Location Map